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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,542	02/13/2004	David Michael Shackelford	SJO920030039US1	8989

EXAMINER	
TSAI, SHENG JEN	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/779,542

Applicant(s)

SHACKELFORD, DAVID MICHAEL

Examiner

Sheng-Jen Tsai

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is taken in response to Applicants' Amendments and Remarks filed on August 2, 2007 regarding application 10,779,542 filed on February 13, 2004.

2. Claims 1-9 and 11-37 have been cancelled.

Claim 10 is pending for consideration.

3. ***Response to Remarks and Amendments***

Applicants' amendments and remarks have been fully and carefully considered.

It was indicated in the previous Office Action that claim 10 is allowed. However, upon further consideration, a 101 issue related to the limitation "a signal bearing medium" as recited in claim 10 has been noticed. Moreover, upon further search of pertinent prior art, a new reference has been identified. Refer to the corresponding sections of the following claim analysis for details.

4. ***Claims Previously Allowed, Now Rejected, Non-Statutory Subject Matter***

The indicated allowability of claim 10 is withdrawn in view of the Non-Statutory Subject Matter.

Claim 10 is directed to machine readable instructions embodied in "a signal bearing medium." The Specification of the Application (US Patent Application Publication 2005/0193239) further defines "a signal bearing medium" to include transmission media [or any other suitable signal-bearing media including transmission media such as digital and/or analog communications links, which may be electrical, optical, and/or wireless. For example, in some embodiments the instructions or code may be accessible from a file server over a network, or from other transmission media,

and the signal bearing media embodying the instructions or code may comprise a transmission media, such as a network transmission line, wireless transmission media, signals propagating through space, radio waves, and/or infrared signals (paragraph 0024)].

The recited subject matter of "signal bearing medium" does not fall within a statutory category of invention because it is neither a process, machine, manufacture, nor a composition of matter. Instead, it is directed to a form of energy. Forms of energy do not fall within a statutory category since they are clearly not a series of steps or acts to constitute a machine, not a tangible physical article or object which is some form of matter to be a product and constitute a manufacture, and not a composition of two or more substances to constitute a composition of matter.

5. *Claims Previously Allowed, Now Rejected, New Art*

The indicated allowability of claim 10 is withdrawn in view of the newly discovered reference (Reams, US 6,438,660).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Romine (US 6,442,604), and in view of Reams (US 6,438,660).

As to claim 10, Romine discloses a **signal bearing medium tangibly embodying a program of machine-readable instructions** [program memory (figure 2, 262~284) and buffers (figure 2, 264, 268 and 274); figures 1 and 6] **executable by a digital processing apparatus** [the CPU, figure 2, 242] **to perform operations for restoring data** [Incremental Archiving and Restoring of Data in a Multimedia Server (title); during restoring of the production, ... (abstract)], **the operations comprising: receiving a request for at least a portion of the data** [in a restoring process, program module 280 controls the CPU and IOC 248 to request and receive blocks formatted for sequential access from one of the digital tape units 202-210, through IOC 248 and into buffer 268 for storage (column 10, lines 42-46)]; **creating a directory entry for the data in a virtual file system** [It is noted that directory and the file entries are inherent attributes of a file system; further, Romine teaches that typically, a single production (i.e., the corresponding directory entry) comprises a video file and up to four audio files. Furthermore, there may be several auxiliary files specifying additional information, including arrangement information and time code information describing how to arrange the information from the video and audio files to form a multimedia stream and when to broadcast portions of the information to play the stream (column 4, lines 66-67 and column 5, lines 1-7); In a RAID system, instead of being stored on a single hard disk, each data file is about evenly spread out across several data disks by a RAID controller card. In addition, parity information is written to a parity disk, so that if any single disk drive fails, there will be no loss of data or access to the data. Access to the disks is cycled across the

data disks by the RAID disk controller and parts of each disk file is read or written in turn to each data drive. This allows a large number of smaller inexpensive disks to operate as though they were one large disk drive (column 3, lines 2-11); thus RAID represents a virtual file system];

allocating storage space for the data [this is inherent for the data retrieve process as the retrieved data must be stored somewhere; further, Romine teaches that there must be sufficient hard disk storage space for restoring the required productions so that other productions may have to be archived (column 5, lines 17-20)];

initializing a block virtualization indicator to a value indicating that the data is not available [Portion 380 keeps track of which parts of the files for a production have been written, allows access to the parts for which writing is complete, and denies access to the parts for which writing is not complete, and reports status back to the IOU (column 12, lines 27-31)];

writing a subset of the data to the storage space [the corresponding storage space is the had disk storage devices (figure 1, 112~120); in a restoring process, program module 280 controls the CPU and IOC 248 to request and receive blocks formatted for sequential access from one of the digital tape units 202-210, through IOC 248 and into buffer 268 for storage (column 10, lines 42-46); Portion 380 keeps track of which parts of the files for a production have been written, allows access to the parts for which writing is complete, and denies access to the parts for which writing is not complete, and reports status back to the IOU (column 12, lines 27-31)]; **and**

changing the block virtualization indicator to a value indicating that the data is available for access by an application [Portion 380 keeps track of which parts of the files for a production have been written, allows access to the parts for which writing is complete, and denies access to the parts for which writing is not complete, and reports status back to the IOU (column 12, lines 27-31)].

Regarding claim 10, Romine does not teach **identifying if an application performs a write that does not require a read/modify/write on a block of the data that has not yet been restored; and if so, marking the block of the data as discarded.**

Reams discloses a data restoring method to restore data from cache memory back to the main memory [referred to as "writeback" operations (column 1, lines 40-61)] in which multiple write requests all directed the same memory address will result in the cancellation of the pending write requests which have not yet been performed except the most recent one [abstract; column 2, lines 15-20]. Note that the writeback operations disclosed by Reams are regular write operations that are not read/modify/write type of operations.

It would have been obvious for one of ordinary skills in the art at the time of Applicant's invention to include the scheme of canceling the pending write requests which have not yet been performed, as demonstrated by Reams, into the existing method disclosed by Romine, because Reams teaches that, by doing so, the number of writes to the main memory is reduced and the throughput and efficiency of the computer system is improved [abstract; column 2, lines 8-20].

8. ***Related Prior Art of Record***

The following list of prior art is considered to be pertinent to applicant's invention, but not relied upon for claim analysis conducted above.

- Blumenau, (US 5,926,836), "Computer and Associated method for Restoring Data Backed Up on Archive Media."
- Shaw et al., (US 5,870,553), "System and Method for On-Demand Video serving from Magnetic Tape Using Disk Leader Files."
- Ofec et al., (US 6,920,537), "Apparatus and Methods for Copying, Backing Up and Restoring Logical Objects in a Computer Storage System by Transferring Blocks out of Order or in Parallel."
- Takeda et al., (US Patent Application Publication 2004/0172509), "Data Processing System Including Storage Systems."
- Edsall et al., (US Patent Application Publication 2003/0172149), "Methods and Apparatus for Implementing Virtualization of Storage within a Storage Area Network."
- Mogi et al., (US Patent Application Publication 2003/0093439), "Methods and Apparatus for Relocating Data Related to Database Management System."
- Mogi et al., (US Patent Application Publication 2003/0229645), "Data Mapping Management Apparatus."

Conclusion

9. Claim 10 is rejected as explained above.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheng-Jen Tsai whose telephone number is 571-272-4244. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheng-Jen Tsai
Examiner
Art Unit 2186

August 7, 2007



MATTHEW KIM
SUPERVISORY PATENT EXAMINER
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